

1.1 Radio Astronomy

1.1.1 Maintenance and Calibration

- Update of VLBI local performance scripts to solve for several issues at the procedure (prc) Field System files.
- Update of local Radio Astronomy procedures to contemplate CAD-VLBI-MK5-124 Mark 5 Disk pack Usage and Validation.
- Prompted by RA department CMF staff performed K-band LNA cooled down process. New temperature values are: 70K stage: 47.47K; 15K stage: 14.64K (previous values were 119.45 and 23.85K).
- Continued the development and testing of several TDN connection blocks to support VLBI observations.
- Performed conditioning of several Mark5 modules.

1.1.2 RA meetings, R&D and training courses

After the Jupiter impact observing campaign in July and August, Host Country group is currently analyzing in detail the spectroscopy data and the 22 GHz light curve.

RA department attended the Maintenance and Operations Training Courses for Ka2 RF Equipment installed at DSS54 antenna.

1.1.3 Observations

1.1.3.1 Host Country Spectroscopy

During this month Host Country time was devoted to follow Jupiter K-band emission evolution after the July impact. Total flux density measurements were performed using the Antenna Calibration and Measurement Equipment (ACME). DSS-54 Q-band commissioning phase is in halt until Ka-band phase2 downtime period finishes in October.

DOY	minutes scheduled	minutes used	Percent good data	Activity	comments
218	240	240	90	“GBRA H/C D63-JupiterToO”	OK
223	240	240	70	“GBRA H/C D63-JupiterToO”	OK

1.1.3.2 Interferometry

MDSCC participated in 4 Very Long Baseline Interferometric (VLBI) observations (2570 min in total):

- RFC Clock Synchronization on DSS-65 (2 observations; 220 min): 100% data collected for the first one; data degraded due to subreflector drive cabinet state (DR#M105472) for the second one.

- RFC Catalog M&E S/X on DSS-65 (1 observation; 1225 min): 4 sources lost (out of 841 sources) due to different antenna problems (DR#M105453 and #M105454). Data was also degraded due to subreflector drive cabinet state (DR#M105452). Second 224Mbps recording using the 4MHz VC filters
- RFC Catalog X/Ka on DSS-55 (1 observation; 1125 min): 187 sources lost (31.5% of total) due to DSS55 antenna drive problems (DR#M105457) and 36 partially lost. Third 224Mbps recording using the 4MHz VC filters.